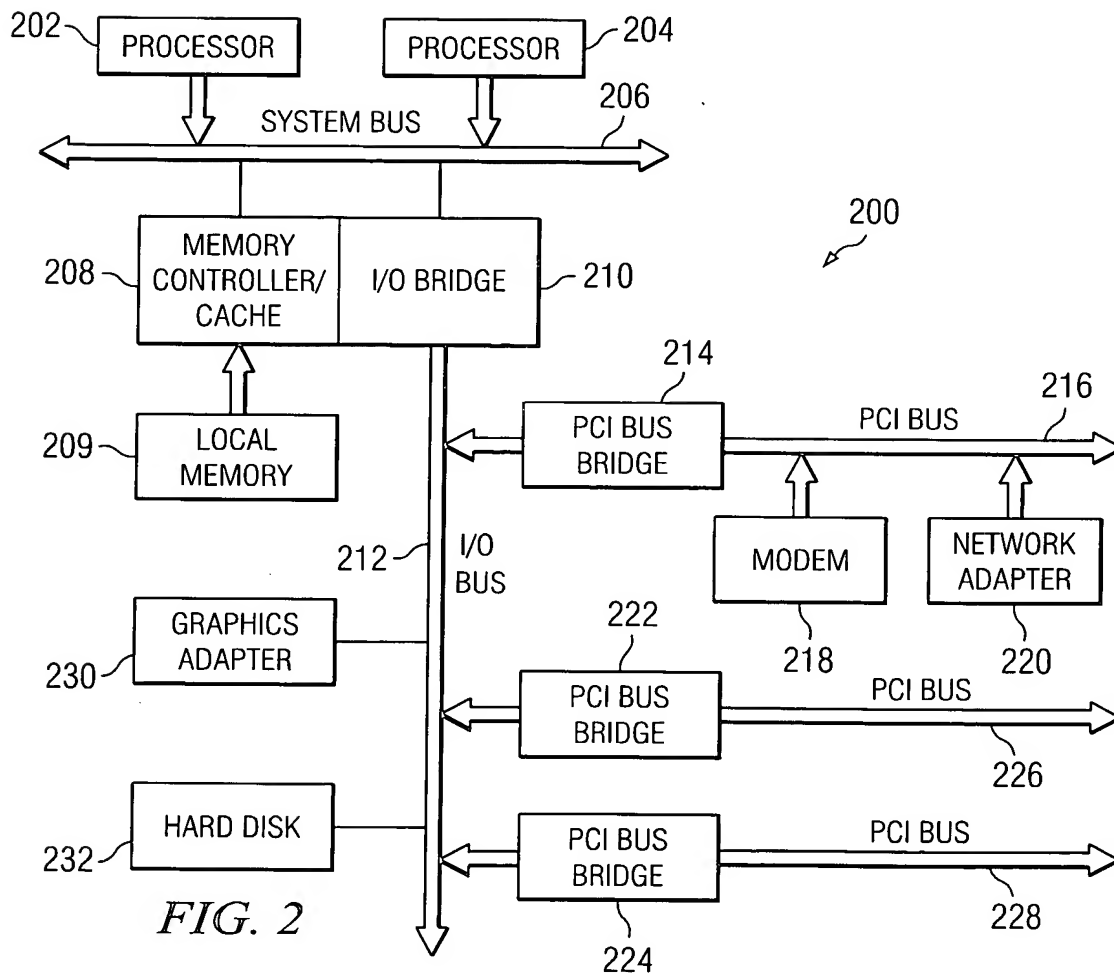
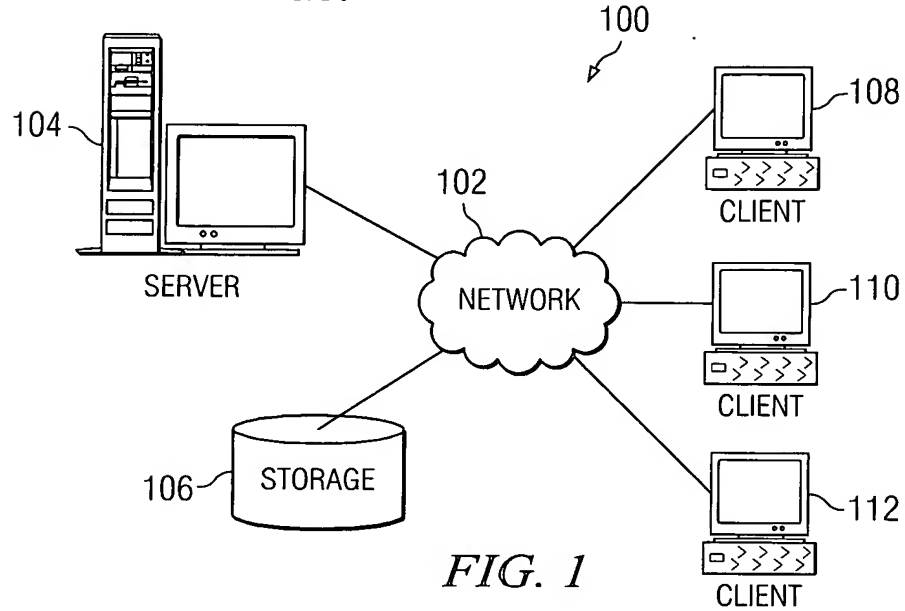


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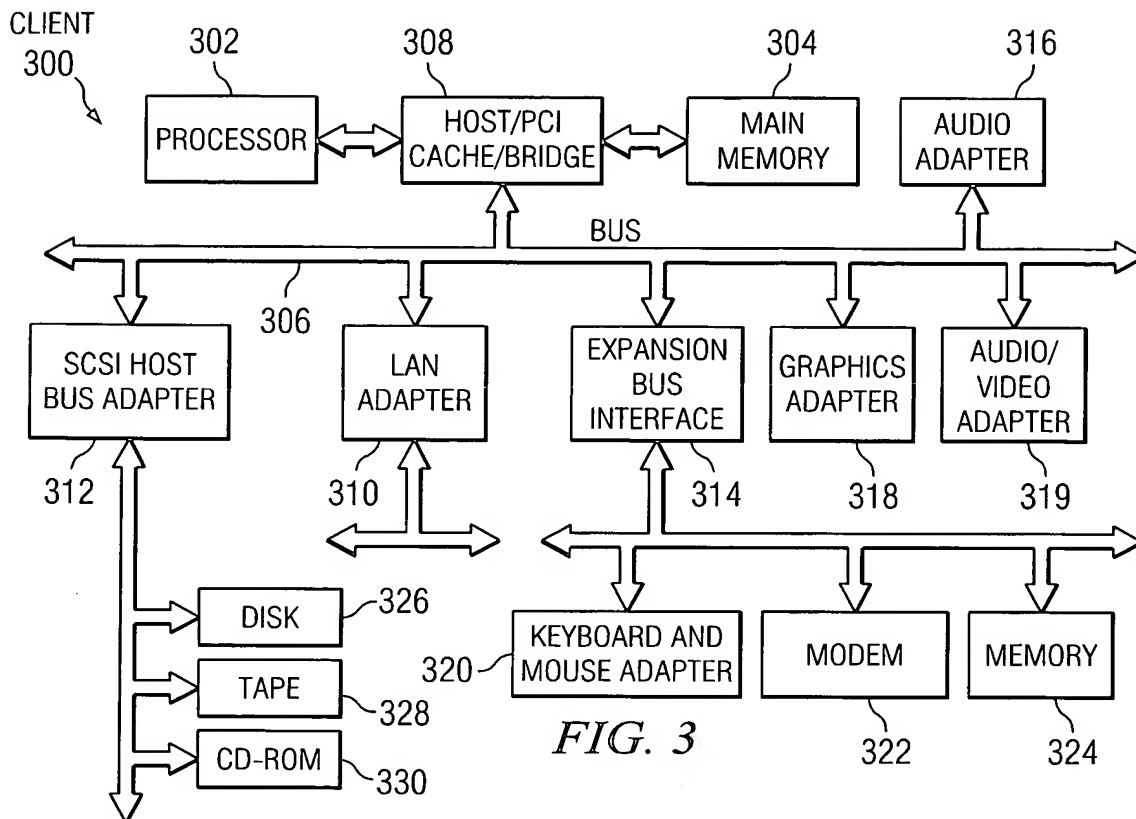


FIG. 3

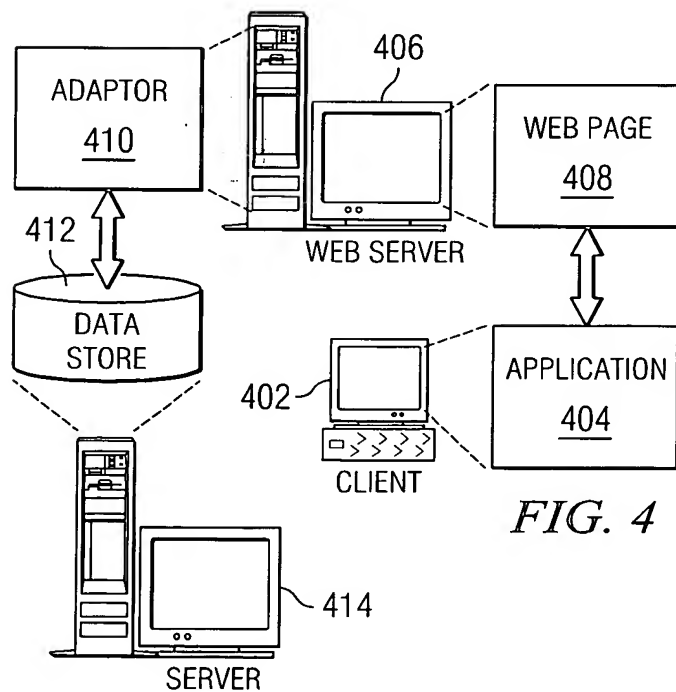


FIG. 4

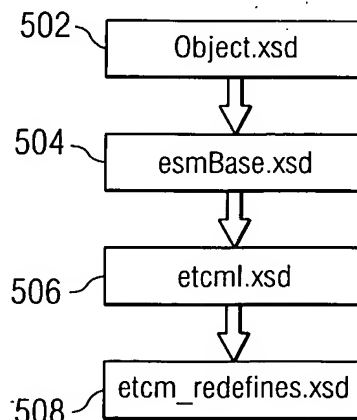


FIG. 5

FIG. 6A

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```

<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema version="1.0" xml:lang="en-US"
targetNamespace="http://www.ibm.com/esm"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="http://www.ibm.com/esm"
xmlns:etcML="http://www.ibm.com/v1/etcML" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xsd:import namespace="http://www.ibm.com/v1/etcML"
schemaLocation="etcml_redefines.xsd" />

  <xsd:element name="esmML" type="etcML:etcRootType"> 602
    <xsd:annotation>
      <xsd:documentation xml:lang="en-us">Root element for our new
        extended esm language.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>

  <xsd:complexType name="ESMResponseBodyType">
    <xsd:annotation>
      <xsd:documentation>ESM customized response Body</xsd:documentation>
    </xsd:annotation>
    <xsd:complexContent>
      <xsd:extension base="etcML:ResponseBodyType"> 606
        <xsd:sequence>
          <xsd:element name="RowSet" type="RowSetType"
            minOccurs="0" maxOccurs="1" />
          <xsd:element name="Properties"
            type="PropertiesType" minOccurs="0" maxOccurs="1" />
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <xsd:complexType name="ParameterType">
    <xsd:complexContent>
      <xsd:extension base="etcML:ParameterType"> 610
        <xsd:sequence>
          <xsd:element ref="etcML:RequestedFields" minOccurs="1"
            maxOccurs="1" />
          <xsd:element ref="etcML:StartRow" minOccurs="0"
            maxOccurs="1" />
          <xsd:element ref="etcML:MaxRowCount" minOccurs="0"
            maxOccurs="1" />
          <xsd:element ref="etcML:DisplayRowCount" minOccurs="0"
            maxOccurs="1" />
          <xsd:element name="RowSet" type="RowSetType"
            minOccurs="0" maxOccurs="1" />
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

```

FIG. 6B

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```

620 { <xsd:complexType name="PropertiesType">
      <xsd:complexContent>
        <xsd:extension base="etcML:TicketingRecordSetType">
          <xsd:sequence maxOccurs="unbounded" minOccurs="1">
            <xsd:element name="Property" type="FieldType" />
          </xsd:sequence>
        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  }

628 { <xsd:complexType name="RowSetType">
      <xsd:complexContent>
        <xsd:extension base="etcML:TicketingRecordSetType">
          <xsd:sequence maxOccurs="unbounded" minOccurs="1">
            <xsd:element name="Row" type="RowType" />
          </xsd:sequence>
          <xsd:attribute name="name" type="xsd:string" />
        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  }

623 { <xsd:complexType name="FieldType">
      <xsd:sequence>
        <xsd:element name="name" type="xsd:string" />
        <xsd:element name="value" type="xsd:string" />
      </xsd:sequence>
    </xsd:complexType>
  }

630 { <xsd:complexType name="RowType">
      <xsd:sequence minOccurs="0">
        <xsd:element name="Column" type="ColumnType" minOccurs="0"
          maxOccurs="unbounded" />
        <xsd:element name="RowSet" type="RowSetType" minOccurs="0"
          maxOccurs="unbounded" />
      </xsd:sequence>
      <xsd:attribute name="name" type="xsd:string" />
      <xsd:attribute name="rowNumber" type="xsd:positiveInteger" />
    </xsd:complexType>
  }

636 { <xsd:complexType name="ColumnType">
      <xsd:complexContent>
        <xsd:extension base="FieldType">
          <xsd:sequence>
            <xsd:element name="enums" type="EnumsType" minOccurs="0" />
            <xsd:element name="metadata" type="MetadataType" minOccurs="0" />
          </xsd:sequence>
        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  }

640 { <xsd:complexType name="EnumsType">
      <xsd:sequence maxOccurs="unbounded" minOccurs="1">
        <xsd:element name="enum" type="xsd:string" />
      </xsd:sequence>
    </xsd:complexType>
  }

```

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FIG. 7A

5/10

```

<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xml:lang="en-us" version="1.0" elementFormDefault="unqualified"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" attributeFormDefault="unqualified"
targetNamespace="http://www.ibm.com/v1/etcML"
xmlns="http://www.ibm.com/v1/etcML" xmlns:Q1="http://www.ibm.com/etc">
  <xsd:complexType name="etcRootType">
    <xsd:sequence minOccurs="1" maxOccurs="1">
      <xsd:element name="Transactions" type="TransactionsContainerType"
minOccurs="0" maxOccurs="1" />
    </xsd:sequence>
    <xsd:attribute name="ID" type="xsd:ID" use="optional" />
  </xsd:complexType>
  <xsd:complexType name="TransactionsContainerType">
    <xsd:choice minOccurs="1" maxOccurs="1">
      <xsd:element name="Request" type="TransactionRequestType"
minOccurs="0" maxOccurs="1" />
      <xsd:element name="Response" type="TransactionResponseType"
minOccurs="0" maxOccurs="1" />
    </xsd:choice>
  </xsd:complexType>
  <xsd:complexType name="TransactionRequestType">
    <xsd:complexContent>
      <xsd:extension base="TransactionType">
        <xsd:sequence>
          <xsd:element name="SystemID" type="ProviderType"
minOccurs="0"
maxOccurs="1" />
          <xsd:element name="TransactionType"
type="ProviderActionType" minOccurs="1" maxOccurs="1" />
          <xsd:element name="Parameters"
type="ParameterType" />
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:complexType name="TransactionType">
    <xsd:attribute name="userID" type="xsd:string" use="required" />
    <xsd:attribute name="password" type="xsd:string" use="optional" />
    <xsd:attribute name="timeStamp" type="xsd:dateTime" use="required" />
    <xsd:attribute name="languageCode" type="LanguageCodeType" use="required" />
    <xsd:attribute name="countryCode" type="CountryCodeType" use="required" />
    <xsd:attribute name="timeZone" type="TimeZoneType" use="required" />
  </xsd:complexType>
  <xsd:simpleType name="ProviderType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="e-ESM61" />
      <xsd:enumeration value="e-ESM44" />
    </xsd:restriction>
  </xsd:simpleType>

```

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FIG. 7B

6/10

```

<xsd:complexType name="TransactionFilteredRequestType">
  <xsd:complexContent>
    <xsd:extension base="TransactionRequestType">
      <xsd:sequence>
        <xsd:element ref="Filters" minOccurs="0"
          maxOccurs="1"> </xsd:element>
        <xsd:element ref="Sort" minOccurs="0"
          maxOccurs="1"> </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

<xsd:element name="Sort">
  <xsd:complexType>
    <xsd:sequence maxOccurs="1" minOccurs="1">
      <xsd:element ref="SortOrder" minOccurs="1"
        maxOccurs="unbounded" />
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

<xsd:element name="SortOrder" type="SortOrderType" />

<xsd:complexType name="SortOrderType">
  <xsd:sequence minOccurs="1" maxOccurs="1">
    <xsd:element ref="Value" minOccurs="1"
      maxOccurs="1"> </xsd:element>
    <xsd:attribute name="operator"
      type="SQLGroupByOperatorType"> </xsd:attribute>
  </xsd:sequence>
</xsd:complexType>

<xsd:element name="Value" type="xsd:string"> </xsd:element>

<xsd:simpleType name="SQLGroupByOperatorType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Ascending"> </xsd:enumeration>
    <xsd:enumeration value="Descending"> </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>

<xsd:element name="Filters">
  <xsd:complexType>
    <xsd:sequence maxOccurs="unbounded">
      <xsd:element ref="Filter" minOccurs="0"
        maxOccurs="unbounded" />
      <xsd:element ref="Filters" minOccurs="0"
        maxOccurs="unbounded" />
    </xsd:sequence>
    <xsd:attribute name="operator"
      type="SQLConditionJoinOperatorType" use="required" />
  </xsd:complexType>
</xsd:element>

```

730 {

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FIG. 7C

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```

760 {
  <xsd:simpleType name="SQLConditionJoinOperatorType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="And"> 762
    </xsd:enumeration>
      <xsd:enumeration value="Or"> 764
    </xsd:enumeration>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:element name="Filter" type="FilterType" />
}

768 {
  <xsd:complexType name="FilterType">
    <xsd:sequence minOccurs="0" maxOccurs="unbounded">
      <xsd:element ref="Value" minOccurs="1" maxOccurs="unbounded" />
    </xsd:sequence>
    <xsd:attribute name="key" type="xsd:string" use="required" />
    <xsd:attribute name="operator" type="SQLConditionOperatorType" 770
      use="required" />
  </xsd:complexType>
}

772 {
  <xsd:simpleType name="SQLConditionOperatorType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="Equal"> </xsd:enumeration>
      <xsd:enumeration value="GreaterThan"> </xsd:enumeration>
      <xsd:enumeration value="LessThan"> </xsd:enumeration>
      <xsd:enumeration value="GreaterThanOrEqualTo"> </xsd:enumeration>
      <xsd:enumeration value="LessThanOrEqualTo"> </xsd:enumeration>
      <xsd:enumeration value="NotEqualTo"> </xsd:enumeration>
      <xsd:enumeration value="Like"> </xsd:enumeration>
      <xsd:enumeration value="In"> </xsd:enumeration>
      <xsd:enumeration value="Between"> </xsd:enumeration>
      <xsd:enumeration value="NotIn"> </xsd:enumeration>
      <xsd:enumeration value="NotBetween"> </xsd:enumeration>
    </xsd:restriction>
  </xsd:simpleType>
}

774 {
  <xsd:complexType name="TransactionResponseType">
    <xsd:complexContent>
      <xsd:extension base="TransactionType">
        <xsd:sequence minOccurs="1" maxOccurs="1">
          <xsd:element name="SystemID" type="ProviderType"
            minOccurs="0" maxOccurs="1"> </xsd:element>
          <xsd:element name="TransactionType"
            type="ProviderActionType" minOccurs="1"
            maxOccurs="1"> </xsd:element>
          <xsd:element name="ErrorCode"
            type="ProviderErrorCodeType" 778
            minOccurs="1" maxOccurs="1" />
          <xsd:element name="ResponseDescription"
            type="xsd:string" minOccurs="1" maxOccurs="1" />
          <xsd:element name="Body" type="ResponseBodyType" 776
            minOccurs="0" maxOccurs="1" />
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
}

```

```

<xsd:simpleType name="ProviderErrorCodeType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="0"> 782
      <xsd:annotation>
        <xsd:documentation xml:lang="en-us"> Successful 784
          transaction</xsd:documentation>
        </xsd:annotation>
      </xsd:enumeration>
    <xsd:enumeration value="10000"> 786
      <xsd:annotation>
        <xsd:documentation xml:lang="en-us"> System
          failure 788</xsd:documentation>
        </xsd:annotation>
      </xsd:enumeration>
    </xsd:restriction>
  </xsd:simpleType>
</xsd:schema>

```

FIG. 7D

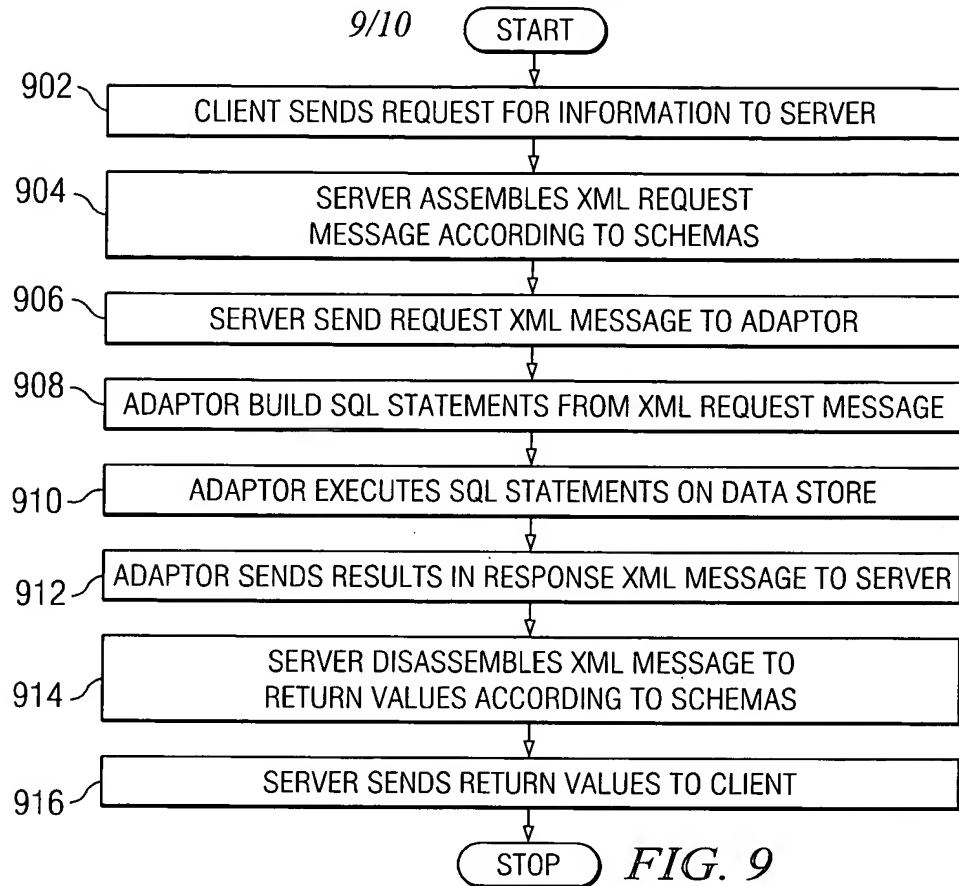
```

<?xml version="1.0" encoding="UTF-8"?> 800
<xsd:schema targetNamespace="http://www.ibm.com/v1/etcML"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns="http://www.ibm.com/v1/etcML" attributeFormDefault="unqualified"
  elementFormDefault="unqualified">

  <xsd:redefine schemaLocation="etcml.xsd">
    <xsd:simpleType name="ProviderActionType">
      <xsd:restriction base="ProviderActionType">
        <xsd:enumeration value="add" />
        <xsd:enumeration value="delete" />
        <xsd:enumeration value="get" />
        <xsd:enumeration value="list" />
        <xsd:enumeration value="validate" />
        <xsd:enumeration value="modify" />
      </xsd:restriction>
    </xsd:simpleType>
    <xsd:simpleType name="ProviderErrorCodeType">
      <xsd:restriction base="ProviderErrorCodeType">
        <xsd:minInclusive>0</xsd:minInclusive>
        <xsd:maxInclusive>12000</xsd:maxInclusive>
      </xsd:restriction>
    </xsd:simpleType>
  </xsd:redefine>
</xsd:schema>

```

FIG. 8



```

<?xml version="1.0" encoding="UTF-8"?>
<esm:esmML xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:esm="http://www.ibm.com/esm" xmlns:etcML="http://www.ibm.com/v1/etcML" ID="1">
1002  <Transactions>
1004    <Request xsi:type="esm:ObjectRequestType" countryCode="fr" languageCode="FR"
      timeZone="" esm:agentID="EXAV" esm:userTrace="false">
1008      <SystemID>eESM630</SystemID>
1006      <TransactionType>list</TransactionType>
1010      <Parameters xsi:type="esm:ParameterType">
1011        <etcML:RequestedFields>
1012          <RequestedField>ProblemTicket.id</RequestedField>
1014          <RequestedField>ProblemTicket.Person.id</RequestedField>
1016        </etcML:RequestedFields>
1018        <etcML:StartRow>1</etcML:StartRow>
1020        <etcML:DisplayRowCount>10</etcML:DisplayRowCount>
1022      </Parameters>
1024      <etcML:Filters operator="AND">
1026        <etcML:Filter key="ProblemTicket.id" operator="NotEqualTo">
1028          <etcML:Value>L</etcML:Value>
        </etcML:Filter>
      </etcML:Filters>
      <esm:TransactionTarget>ProblemTicket</esm:TransactionTarget>
    </Request>
  </Transactions>
</esm:esmML>
  
```

FIG. 10

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```

[11/14/03 15:55:57.057 CST] Servlet.Engine.Transports : 0:DEBUG
com.ibm.etc.cct.adapter.esm63.ejb.ESMAAdapter63Bean.DataAccessManager - SQL 1101
    1102 ~~~~~ 1104 ~~~~~ 1106
    Stmt:SELECT PROBLEMS.PROBLEM_ID, PROBLEMS.FIRST_PEOPLE_ID FROM
1108 ~~~~~ 1110
    TSD630UC.PROBLEMS PROBLEMS WHERE 1=1 AND ( ( PROBLEMS.PROBLEM_ID <>?)
    FETCH FIRST 201 ROWS ONLY

[11/14/03 15:55:57.057 CST] Servlet.Engine.Transports : 0:DEBUG
com.ibm.etc.cct.adapter.esm63.ejb.ESMAAdapter63Bean.DataAccessManager-
setParameters(List parameters, PreparedStatement ips):Param Type: CHAR Value:L 1112

<?xml version="1.0" encoding="UTF-8"?>
<esm:esmML xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
1122 ~~~~~ 1120
    xmlns:esm="http://www.ibm.com/esm" ID="1">
    1124 ~~~~~ <Transactions>
        <Response xsi:type="esm:ObjectResponseType" countryCode="fr" language code="FR"
        timeStamp="2003-11-14T22:04:24Z" timeZone="">
            <SystemID>eESM630</SystemID>
            <TransactionType>list</TransactionType> 1128
            <ErrorCode>0</ErrorCode> 1126
            <ResponseDescription>success</ResponseDescription> 1130
            <Body xsi:type="esm:ObjectResponseBodyType">
            1136 ~~~~~ <esm:RowSet displayRowCount="10" fetchCount="201" maxRowCount="200"
            startRow="1" totalCount="200" esm:name="ProblemTicket"> 1137
                <esm:Row esm:name="ProblemTicket" esm:rowNumber="1">
                1138 ~~~~~
                    <esm:Column>
                    1139 ~~~~~
                        <esm:name>ProblemTicket.id</esm:name> 1140
                        <esm:value>SITEA-00000034</esm:value> 1142
                    </esm:Column>
                    <esm:Column>
                        <esm:name>ProblemTicket.Person.id</esm:name> 1144
                        <esm:value>470000003</esm:value> 1146
                    </esm:Column>
                </esm:Row>
                <esm:Row esm:name="ProblemTicket" esm:rowNumber="2">
                    <esm:Column>
                        <esm:name>ProblemTicket.id</esm:name>
                        <esm:value>SITEA-00000089</esm:value>
                    </esm:Column>
                    <esm:Column>
                        <esm:name>ProblemTicket.Person.id</esm:name>
                        <esm:value>470000003</esm:value>
                    </esm:Column>
                </esm:Row>
            </esm:RowSet>
        </Body>
    </Request>
    </Transactions>
</esm:esmML>

```

FIG. 11